WILDLIFE MANAGEMENT AND RESEARCH NOTES

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923	TITLE: Wild Turkey Brood Production - Summer 2006	12/8/06

Abstract: The 2.6 poults:hen (PI) observed in 2006 was slightly more than the 2.3 in 2005, significantly lower than the 4.4 in 2004 ($P < 0.05$) but not different from the 3.3 of the previous 5 years of 2001-2005 ($P > 0.05$) . The proportion of hens observed with poults was 82%, slightly more than the 74% in 2005 The general decreasing trend (1993-2006) in the annual summer production of wild turkeys is indicative of a population whose growth rate is beginning to level off to "maintenance" or stable population level.

Work Plan: # 204301 Formerly Federal Aid Study/Job No.: W-26-R-37; Job 16-G-4.

METHODS

In 2006, district wildlife biologists and conservation officers recorded observations of wild turkey hens and poults during July and August. The wild turkey summer brood Production Index (PI) is the total poults/total adult hens (poults:hen ratio) compiled from July and August into one combined index. The August production index is generally higher than in July due to "gang" brood behavior that occurs when several individual broods and hens without broods combine into a single brood flock.

RESULTS and DISCUSSION

A total of 350 observation cards was received for the July and August reporting period with 176 cards reporting at least one observation (Table 1). The 2006 production index was 2.6 poults:hen with 82% of the hens observed with at least 1 poult (Figure 1). The average size of the 477 broods reported (hens + poults per brood observation) was 3.7 birds which was less than the 5.4 mean brood size observed in 2005 ($n = 360$; $P < 0.05$).

The 2.6 poults:hen (PI) observed in 2006 was slightly more than the record low PI of 2.3 PI in 2005, significantly lower than the record high 4.4 PI in 2004 ($P < 0.05$) but not different ($P > 0.05$) from the 3.3 PI of the previous 5 years of 2001-2005 (Table 2). A bias in the observation data, that is difficult to assess, is the tendency of observers to report hens with poults more so than "barren hens". The reporting bias would result in a higher PI than actually occurred.

Since 1993, the annual PI has decreased (Figure 2) with most recent years falling below the overall mean of 3.3 PI from previous years (1993-2005). The downward trend in the PI is considered indicative of a wild turkey population as it makes the transition from a colonizing, reestablishing population with geometric growth to an established population where annual production and growth rate levels off to a maintenance level characteristic of a stabilized population. The lower level of annual production and population growth should be considered in future harvest management decisions.

Reasons for the lower than average production in 2006, albeit slight, are probably related to the above normal precipitation and notable precipitation events (heavy thunderstorms) that occurred across the state during the summer of 2006 (" 2006 Indiana Crop & Weather Reports", Indiana Agricultural Statistics, USDA). The relatively large cohort of 2-yr-old adult hens, from the record 2004 summer production, may have helped compensate for the potential losses in production due to adverse climatic conditions.

Regional summaries were not possible due to the sample size and inconsistencies in the data reporting.

Table 1. Indiana wild turkey brood production - Summer 2006.

July & August Combined	Adult Hens	No. of Poults	Brood Size *	Poults/ Hen		
Totals	1219	3226		2.6		
Means	2.1	5.6	8.8	3.7 **	Total Number of Cards =	350
No. of Observations	581	536	477	477	Cards with ≥ 1 observation	176
SE=	0.07	0.29	0.32	0.14	Percent hens with broods	82%

Jul-05	Adult Hens	No. of Poults	Brood Size *	Poults/ Hen		
Totals	527	1393		2.6		
Means	2.1	5.4	8.6	3.8 **	Total Number of Cards =	176
No. of Observations	256	211	211	211	Cards with ≥ 1 observation	82
SE=	0.08	0.34	0.36	0.16	Percent hens with broods	82%

Aug-05	Adult Hens	No. of Poults	Brood Size *	Poults/ Hen		
Totals	692	1833	2368	2.6		
Means	2.1	5.6	8.9	3.6**	Total Number of Cards =	174
No. of Observations	325	325	266	266	Cards with ≥ 1 observation	94
SE=	0.07	0.26	0.30	0.12	Percent hens with broods	82%

* Brood size = all hens + all poults observed as a group at one time

** The mean poults/hen calculated using only those observations where hens were observed with broods.

The total poults/total hens observed for July + August = annual Production Index (PI).

Figure 1 Wild Turkey Brood Production

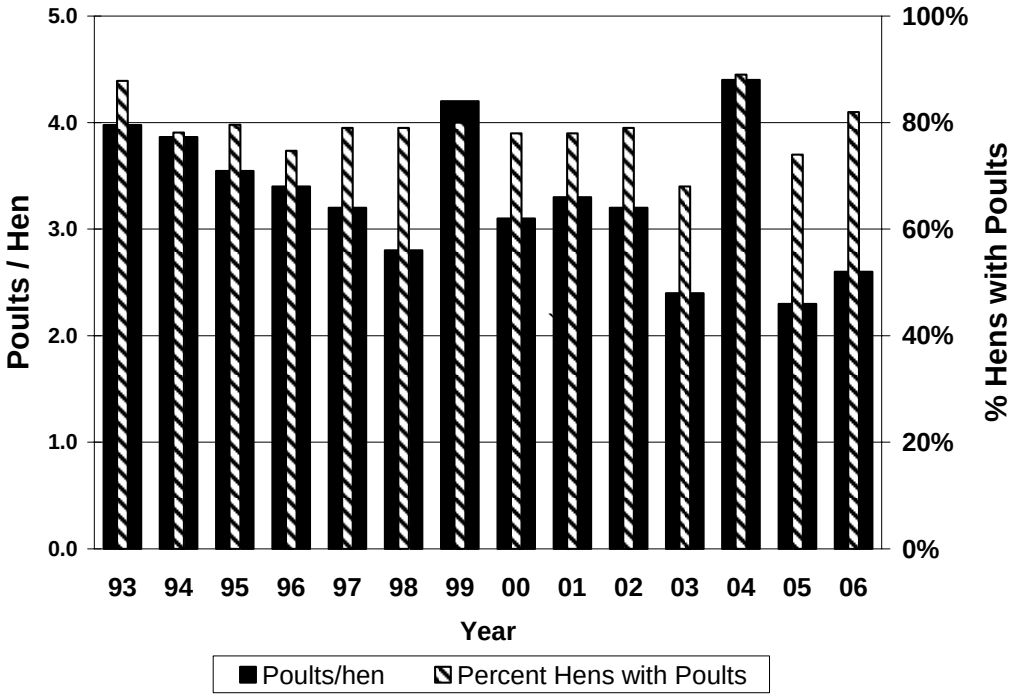

Table 2. Indiana wild turkey production indices, 1993-2006.

Year	Poults : Hen [a]		% Hens with poults		No. of Observations
93	4.0		88%		101
94	3.9		78%		175
95	3.5		80%		121
96	3.4		75%		142
97	3.2		79%		126
98	2.8		79%		134
99	4.2		80%		229
00	3.1		78%		227
01	3.3		78%		313
02	3.2		79%		338
03	2.4		68%		312
04	4.4		89%		597
05	2.3		74%		240
Mean & SE [b]	*3.1*	*0.4*	*78%*	*3%*	*360*
06	**2.6**		**82%**		**477**

[a] The production index (PI) is the total poults/total hens observed for July and August = annual production index.

[b] Production Index Mean (Standard Error) for 5 previous years.

Figure 2 Wild Turkey Production - Indiana